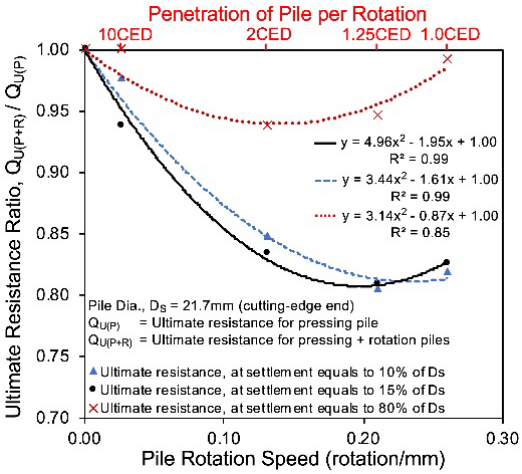
Young Members Column

Faisal Shahzad

Master Student, Department of Civil and Environmental Engineering
Saitama University

I am Faisal Shahzad from Pakistan. I completed my bachelor's degree majoring in Civil Engineering from the University of Engineering and Technology (UET), Lahore - Pakistan, back in 2013. Currently, I am a Master's second-year student at the Department of Civil and Environmental Engineering, Saitama University, Japan. Right after my graduation, I got a job as a Junior Engineer in the Geotechnical and Geo-environmental Engineering (GT&GE) division of one of Pakistan's leading consultancy organizations, "National Engineering Services Pakistan (NESPAK)". I was assigned a field job at 969 MW "Neelum Jhelum Hydroelectric Project" in Azad and Jammu Kashmir (AJK), Pakistan. It was a great opportunity for me to learn actual field practices and apply my theoretical knowledge while working on such a mega project at the start of my professional career. I have been involved in ground excavation works to the designed lines and gradients, dam foundation treatment, slope stabilizing works using shotcrete and wire mesh, rock anchorage and main boundary thrust (MBT) treatment, etc.

Throughout my professional career, it was my sheer desire to pursue higher studies to broaden my knowledge related to Civil Engineering. I was fortunate to get admitted to the Geotechnical and Geosphere Research Group of Saitama University with an ADB-JSP scholarship for my Master's degree. During the first year, when my main focus was on the coursework part, I got a chance to get involved in the research work of my colleague, Mr. Muhammad Azhar Saleem, and support him in his experiments. His research work titled "Performance evaluation of model displacement piles under axial load in dense ground conditions" mainly focused on the end shape of steel pipe pile and helix pitch of screw pile effect on the installation effort and bearing resistance. One of the key outcomes related to steel pipe piles with cutting-edge ends showed that the ultimate bearing capacity decrease with increased rotation speed (rotation/mm). However, if the pile is installed with penetration equal to cutting-edge depth in one rotation, the decrease in ultimate bearing capacity can be reduced.



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Currently, I am working on open and closed-end screw piles. My research work titled "Behavior of open and closed-ended screw piles driven into the Bearing Layer" mainly focuses on the performance of open and closed-end screw piles by installing them into the bearing layer only, by pressing and rotation method. Generally, during an open-end steel pipe pile installation, the pile passes through the top loose strata, and it reaches the dense bearing layer either in partially plugged mode or in the fully plugged mode. Because of this soil plugging, the performance of an open-end steel pipe pile is quite similar to that of a close-end pile at greater depths. However, not enough studies are available on screw piles. Therefore, the prime objective is to investigate the effect of the open and close end conditions of the screw pile on the installation effort (load and torque), bearing response, and surrounding ground disturbance during penetration in the bearing layer. This research work will help to design the deep foundations more efficiently and the performance of piles can be enhanced.